

What is claimed is:

Sub AP 1. A closure for maintaining pressure against a seal affixed to a container lip as a sealed container is exposed to relatively high temperature and pressure conditions,

5 said closure comprising:

a. a cap, having a top with an interior surface and a skirt depending from the top and defining a skirt interior surface, and having at least one thread affixed to the interior skirt surface in a spiral; and

10 b. a liner, proportioned to fit firmly within said cap and abutting the top interior surface thereof, said liner defining a resting thickness at ambient temperature and pressure conditions, and said liner being made from a material capable of being compressed to a thickness less than the resting thickness and being capable of recovering to a recovery thickness sufficient to allow said liner to maintain a positive pressure against said cap and against said seal when said closure is affixed to said container.

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2. The closure of claim 1 wherein said liner is made from a material having a melting point greater than about 265°F and a shore A hardness value of about 70.

20 3. The closure of claim 2 wherein said liner is made from a material selected from the group consisting of a silicone-based material, urethane, latex, rubber, thermoplastic elastomers, thermoset elastomers or a combination thereof.

4. The closure of claim 1 further comprising at least one layer of bonding material between said liner and said top interior surface.

5. The closure of claim 1 further comprising an essentially circular tamper-evident band depending from the skirt.

6. The closure of claim 5 wherein said tamper-evident band includes a break-away section and a means for positively engaging the collar.

7. The closure of claim 6 wherein said collar-engaging means are flexible finger projections.

8. The closure of claim 6 wherein said collar-engaging means is a continuous bead secured to said skirt interior surface.

9. The closure of claim 1 wherein said cap includes at least one slit extending a predetermined length from the top to the skirt.

10. A closure for use with a sealed container having a peelable seal wherein the sealed container is sterilized using a retort process, said closure comprising:

a. a cap, having a top with an interior surface and a skirt depending from the top and defining a skirt interior surface;

b. at least one thread affixed to the skirt interior surface and circumscribing the skirt in a spiral such that a thread receiving groove is formed, said thread having an upper edge wherein an angle θ is defined between the upper edge and a horizontal plane, and the angle θ is less than about 45° ; and

5 c. a liner, proportioned to fit firmly within said cap and abutting the top interior surface thereof, said liner defining a resting thickness at ambient temperature and pressure conditions and said liner being made from a material capable of being compressed to a thickness less than the resting thickness and being capable of recovering to a recovery thickness sufficient to allow said liner to maintain a positive pressure
10 against said cap and against said seal when said closure is affixed to said container.

11. The closure of claim 10 wherein said liner is made from a thermoplastic material.

15 12. The closure of claim 10 wherein said liner is made from a material selected from the group consisting of a silicone-based material, urethane, latex, rubber, thermoplastic elastomers, thermoset elastomers or a combination thereof.

13. The closure of claim 10 wherein the angle θ is less than about 20° .

20 14. The closure of claim 13 wherein the angle θ is about 20° .

15. The closure of claim 13 wherein the angle θ is about 10° .

16. The closure of claim 10 further comprising at least one layer of bonding material between said liner and said top interior surface.

5 17. The closure of claim 10 further comprising an essentially circular tamper-evident band depending from the skirt.

10 18. The closure of claim 17 wherein said tamper-evident band includes a break-away section and a means for positively engaging the collar.

19. The closure of claim 18 wherein said collar-engaging means are flexible finger projections.

15 20. The closure of claim 18 wherein said collar-engaging means is a continuous bead secured to said skirt interior surface.

21. The closure of claim 10 wherein said cap includes at least one slit extending a predetermined length from the top to the skirt.

20 22. A closure for maintaining pressure against a seal affixed to a container lip as a sealed container is exposed to relatively high temperature and pressure conditions, said closure comprising:

a. a cap, having a top with an interior surface and a skirt depending from the top and defining a skirt interior surface, and having at least one thread affixed to the interior skirt surface in a spiral; and

5 b. a liner, having a resting thickness at ambient temperature and pressure conditions, said liner being made from a material capable of being compressed to a thickness less than the resting thickness and being capable of recovering to a recovery thickness in a sealing zone such that said seal is sandwiched between said liner and said container lip at a pressure sufficient to retain said seal against said lip when said sealed container is subjected to retort processing conditions.

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23. The closure of claim 22 wherein said liner is made from a material selected from the group consisting of a silicone-based material, urethane, latex, rubber, thermoplastic elastomers, thermoset elastomers or a combination thereof.

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24. A method for maintaining pressure against a seal affixed to a container lip as a sealed container is exposed to relatively high temperature and pressure conditions, said method comprising reversibly affixing a closure to said container such that a liner of said closure abuts a surface of said seal so as to sandwich said seal between said liner and said container lip, said liner defining a resting thickness at ambient temperature and
20 pressure conditions and said liner being made from a material capable of being compressed to a thickness less than the resting thickness and of recovering to a recovery thickness sufficient to allow said liner to maintain a positive pressure against said seal

upon exposure to elevated temperatures, elevated pressure, or a combination of elevated temperature and elevated pressure.

25. The method of claim 24 wherein said liner is made from a material
5 selected from the group consisting of a silicone-based material, urethane, latex, rubber, thermoplastic elastomers, thermoset elastomers or a combination thereof.

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